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## **Total Maximum Daily Loads (TMDL) Wastewater and Industrial Storm Water Permits**

### **I. TMDL Basics**

#### **A. What is a TMDL?**

1. Calculation of the maximum amount of a pollutant that a water body can receive and still meet Water Quality Standards
2. Covers a wide variety of pollutants  
*E. coli*, phosphorus, PCBs

#### **B. Water Quality Standards**

Set of rules developed to protect designated uses

#### **C. Designated Uses**

1. Agriculture
2. Navigation
3. Industrial water supply
4. Public water supply at the point of water intake
5. Warmwater fishery
6. Other indigenous aquatic life and wildlife
7. Total and partial body contact recreation
8. Fish consumption
9. Coldwater fisher

#### **D. Water Quality Standards**

Rules for:

1. Designated uses (Rule 100)
2. Physical characteristics (Rule 50)
3. Dissolved solids (Rule 51)
4. pH (Rule 53)
5. Toxic Substances (Rule 57)
6. Microorganisms (Rule 62)
7. Nutrients (Rule 60)
8. Dissolved Oxygen (Rule 64 and 65)
9. Temperature (Rules 69-75)



### **II. Why Do We Develop TMDLs?**

- A.** Federal Clean Water Act Section 303(d) requires each state to develop a list of water bodies not meeting Water Quality Standards (i.e. the 303(d) or TMDL list).

1. List must be updated every 2 years
2. List must identify the year the TMDL will be developed
3. A TMDL must be produced for each impaired water body

### **III. Water Quality Assessment**

1. DEQ considers data submitted by
  - DEQ monitoring
  - DEQ grantees
  - Other agencies
  - Contractors
  - Public

2. Information considered in assessments

- Data on fish contaminants
- Water chemistry
- Sediment chemistry
- Biological integrity
- Wildlife contaminants
- Bathing beach monitoring
- Inland lakes monitoring

**IV. Steps to TMDL Development**

1. 303(d) Listing
2. Collect data in preparation, usually 2 years preceding TMDL development.
  - Confirm problem exists
  - Data used to determine extent of impairment and necessary pollutant reductions
3. Develop draft TMDL
4. Public comment
5. Respond to public comments
6. Finalize TMDL and submit to EPA for approval

**V. Parts of a TMDL that matter to you**

1. Numeric Target
2. Allocations
  - WLAs
  - LAs
  - MOS

**A. Numeric Target**

1. Based on a numeric or narrative Water Quality Standard
  - a. *E. coli* numeric Water Quality Standard = 130 colony forming units per 100 milliliters
  - b. Phosphorus narrative Water Quality Standard requires that nutrients be limited to prevent stimulation of aquatic plants/algae which are injurious to the designated uses

**B. Loading Capacity or TMDL Development**

1. Maximum loading (usually pounds) per day of a pollutant that a water body can handle and still meet water quality standards
2. The load is “divided up” among point source and nonpoint sources of the pollutant, represented as:

$$LC \text{ (or TMDL)} = \sum WLAs + \sum LAs + MOS$$

- WLA = Wasteload Allocation (for point sources). This include Wastewater Treatment Plants, Industrial facilities and stormwater
- LA = Load Allocation (for non-point sources)
- MOS = Margin of Safety

**C. Loading Capacity**

1. The amount of a pollutant that can be discharged to a water body while still meeting Water Quality Standards
  - a. Margin of Safety
    - Accounts for the uncertainty with the flow estimation, load calculations, etc.
  - b. Waste Load Allocations
    - Applies to National Pollutant Discharge Elimination System Permits (*Individual and General permits*)
  - c. Load Allocations
    - Applies to Nonpoint Sources of Pollution

## **VI. What happens once a TMDL is approved?**

Examples of actions that can/will occur in NPDES permits to help meet the goal

- A. Permit limits
- B. Elimination of illicit discharges

## **VII. TMDLs and Stormwater Permits – Basics**

- A. Industrial and municipal stormwater are NPDES regulated point sources that must have a numeric WLA in the TMDL (40 CFR § 130.2(h))
- B. Stormwater permit requirements don't have to be numeric - BMP based requirements are recommended
  - 1. Presumptive Approach  
Use BMP performance standards to meet WLA – requires facility-specific allocation
  - 2. Qualitative Benchmarks  
Measurable goals in the permit, which trigger additional actions if not met
  - 3. Adaptive Management  
Iterative approach to meet the WLA – watershed level findings indicate if changes are needed

## **VIII. Industrial Stormwater Permit Requirements**

- A. Is my facility in a TMDL watershed? Look in the Certificate of Coverage (2011 and 2012 COCs only. Not yet in COCs issued in 2008-2010)
- B. Look at your activities and exposures in relation to the TMDL
- C. How do I meet the TMDL? (Part I, Section C.1.d. of the Permit)
  - 1. Identify where controls can be implemented
  - 2. Determine if controls are adequate and effective. Be aware of findings in the watershed
- D. The SWPPP should identify actions taken to meet the TMDL (Part I, Section C.2.g.)

## **IX. Stormwater TMDL Common Sense**

- A. Multiple pollutant sources – P2 can minimize sources
- B. Reduce volume!  
Low Impact Development or Green Infrastructure concepts
- C. Storm variability – plan for the worst case scenario
  - 1. Wind and blowing rain
  - 2. Flooding
  - 3. Frozen ground
  - 4. First flush vs saturated ground
- D. Sampling not required routinely. Good faith effort and cooperation will minimize the possibility of sampling requirements
- E. Go it Alone or Go for Help?
  - 1. Ask the district stormwater staff
  - 2. RETAP – Stormwater evaluation could be part of a larger facility review

## **Resources**

### Industrial Storm Water Program Website:

[www.michigan.gov/degwater](http://www.michigan.gov/degwater), select “Surface Water” then “Storm Water” and finally look for “Industrial Program”, which can be found under “Information” within the page.

Hotlink: [http://www.michigan.gov/deg/0,1607,7-135-3313\\_3682\\_3716-23997--,00.html](http://www.michigan.gov/deg/0,1607,7-135-3313_3682_3716-23997--,00.html)

Resources available on this webpage include:

- Storm Water Certified Operator Training Materials
- Storm Water Certified Operator Exam Schedules
- Storm Water Certified Operator Review
- Notice of Intent (application)
- No Exposure Certification
- Scrap Metal Dumpster Guidance Document

### Mobile Power Washing Guidance Document:

[www.michigan.gov/deg](http://www.michigan.gov/deg) select “Key Topics” then “Publications” then select “Searchable” for the publications database and type “Power” in the search key, then hit Search. The link will then be listed below the search bar.

### Retired Engineers Technical Assistance Program:

[www.michigan.gov/deg](http://www.michigan.gov/deg) select “Pollution Prevention” then “RETAP.”

Retired professionals are available through the Retired Engineer Technical Assistance Program (RETAP) to assist Michigan businesses and institutions with pollution prevention. Each assessor has thirty to forty years of experience with Michigan industries. Businesses of 500 employees or fewer and institutions of any size are eligible.

Many pollution prevention projects can be funded through the Small Business Pollution Prevention Loan Program. Information regarding this program can be found through the RETAP page, quick link on the right side of the page.